PORT OF PORTLAND

DRY DOCKS 1 & 2 AT MARINE TERMINAL 1

HAZARDOUS MATERIALS INVESTIGATION

Prepared by

PBS ENVIRONMENTAL
1220 S.W. Morrison St.
Portland, OR 97205
(503) 248-1939

PBS Project Number
4810.83

June 1995

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for

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INTRODUCTION

Two Port-owned dry docks at Terminal 1 were observed by Greg Baker/PBS on 5/10/95. Both dry docks were recently moved from the Ship Repair Yards to Terminal 1. The vessels were constructed for the Navy in 1943 and have been moth-balled since the 1950's. The decks are flat and relatively featureless; the holds are multilevelled and partially filled with clutter and disorganized, outdated Navy-related inventories.

The purpose of the visit was twofold: 1) to assess asbestos materials and other potential hazardous conditions and 2) to assess entry-exit procedures and to provide recommendations. At the time of the visit both dry docks were unoccupied and seldom accessed or used. The Port was also interested in knowing whether these spaces could be used for storage, according to Gerald Yungeberg/Port.

FINDINGS

The following potentially hazardous conditions were observed:

1) Confined spaces
2) Slip, trip and fall hazards related to poor housekeeping
3) Peeling lead-containing paints
4) Asbestos materials
5) Other miscellaneous materials

Confined Spaces

The interiors of both dry docks are large confined spaces. The spaces were ventilated prior to the visit and a Port confined space entry permit was filled out (see attached). Greg Baker was accompanied by Steve Gibson/Port; a second man, Ken Underhill/Port, remained on deck in mobile phone contact. Combustible gas indicator (CGI) readings for oxygen were in the acceptable range and remained constant at 20.3% oxygen throughout the visit. Other combustible gases were not indicated in unacceptable ranges.

The confined space program appears to be effective, but access points were not labelled as confined spaces.

Slip, Trip and Fall Hazards

Clutter, equipment and hardware are dispersed throughout both vessels. Some spaces are so filled with objects that passage is difficult and egress would be inhibited in emergency situations. Flashlights were utilized during the visit as on-site lighting was not available; poor lighting/limited visibility could contribute to a head injury or fall.

Peeling Lead-containing Paints

Three (3) samples of paint were collected and analyzed for total lead. All samples contained lead in the 2000 - 3500 parts per million (ppm) range, and may contain other regulated metals. Deck paint is peeling severely and could potentially leach or blow into the adjacent river. Paints inside the vessels are generally in good condition, but are peeling on some shower stalls, door frames and the undersides of urinals.

Asbestos Materials

Suspect asbestos materials are abundant throughout both vessels. Suspect thermal applications include mag block boiler/tank insulation, mag and air cell pipe insulation and vinyl gaskets. Most in-place pipe systems are in good condition, but some limited localized damage was observed. Pipes have not been labelled "DANGER--ASBESTOS"; however, several "DANGER-ASBESTOS" posters are posted throughoutthe interiors of each dry dock. Access points to the vessels are not posted either. Mag boiler jackets were also damaged, with accumulations of gross visible friable debris. A variety of other suspect asbestos applications are assumed present and concealed within the boilers. Gaskets are present on all high pressure steam lines; loose gasket materials are randomly strewn throughout the vessels, and some are moderately friable.

Nonfriable suspect asbestos materials are present in the forms of floor tile/mastic, cement asbestos board sheets and cement asbestos block insulators. Suspect floor tile/mastic is presently in good condition and does not appear to present a hazard in its current condition.

Several cement asbestos board sheets on walls and ceilings are cracked, damaged or missing, with debris often located near damaged areas. Some walls have "ASBESTOS: DANGER" signs posted on them. Electrical transformers and other high voltage equipment have cement asbestos insulating blocks in good condition. Electrical wiring and cables may have asbestos-containing textile wrap; friable suspect asbestos rope was observed inside damaged "baloney" cables.

Other Miscellaneous Materials and Conditions

Mercury pressure gauges, lead cable components and metallic welding slags were observed on both vessels. A sample of leaking transformer oil tested negative for polychlorinated biphenyls (PCB's); the lab report indicates that the leaking oil may be an oil called halowax. Batteries were not observed, nor were any fire extinguishers.

Our site visit was a brief reconnaissance of both dry docks--under four hours total in the field; a more exhaustive investigation would likely discover additional hazardous materials and conditions. The initial findings and recommendations were immediately conveyed verbally to Gerald Yungeberg by Greg Baker before leaving the site.

RECOMMENDATIONS

Option A

The Port could simply label all access points with confined space signs, asbestos-danger signs, provide hazard awareness training to appropriate employees, and then lock the vessels up, and prohibit all employees from entering these spaces. However, if the Port elects to allow access to these confined spaces, Option B recommendations 1 - 4 below, should be implemented, at a minimum.

Option B

1. Upgrade the confined space entry program to incorporate hazard communication program elements including:

   a. Post "CONFINED SPACE--PERMIT REQUIRED" signs on all access points; also post "ASBESTOS--DANGER" signs regulating the areas at least until Recommendation #2 is implemented. Anyone who enters the vessels must receive an initial exposure assessment through personnel air monitoring; these individuals must be made aware of the potential asbestos exposure sources and must be prohibited from touching or disrupting suspect asbestos materials in any manner.

   b. Communicate hazards to everyone who enters these vessels; make this report available to them.

   c. Continue to utilize HEPA-filtered, half-faced respirators at a minimum in these areas; make certain that the users are incorporated into the Port's written respiratory protection program. Require entrants to don full body disposable coveralls before entering, and doff the coveralls into a proper asbestos disposal bag before exiting the spaces.

   d. Do not utilize the vessels as "new storage areas" unless report recommendations have been implemented.

2. Retain a licensed asbestos abatement contractor for the following:

   a. Remove storage lockers of friable mag block insulating and asbestos insulating cement.

   b. HEPA-vacuum friable asbestos debris accumulations and tack-coat/encapsulate the immediate areas where debris has been removed.

   c. Patch damaged thermal insulation.

   d. Spray-encapsulate cracked cement asbestos board surfaces.

e. Collect and dispose of cement asbestos board debris and loose pieces of gasket materials.

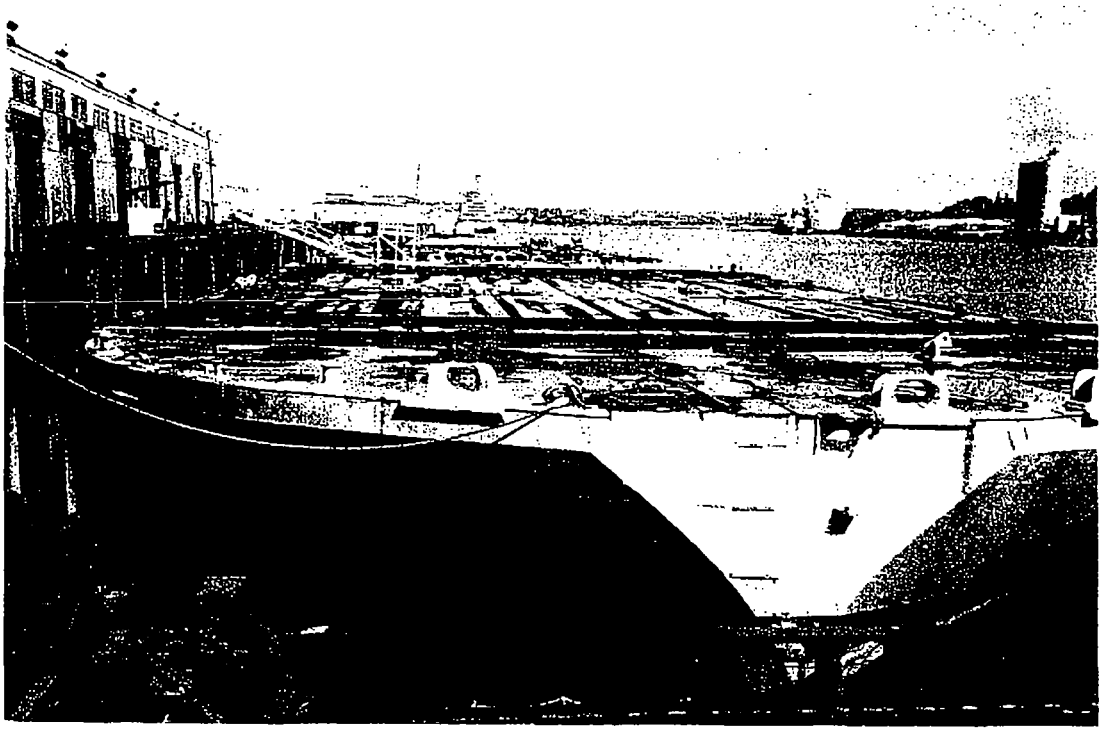
f. Clear the main corridors and doorways of clutter and store these items elsewhere on the vessels.

g. Spray-mist a fog of encapsulant throughout the vessels to lock down asbestos fibers which have migrated from areas of damaged asbestos materials; perform follow-up ambient air monitoring to document air-borne concentrations below 0.01 fibers/cc.

h. Apply additional DANGER signs or labels to specific suspect asbestos material types.

3. Do not impact paints without a Lead Compliance Program; do not impact paints by sanding, torch-cutting or other manner that could create a lead exposure. Do not allow flaking deck paint to be transported into the adjacent river; perform hazardous waste characterizations of paint wastes through TCLP testing prior to disposal.

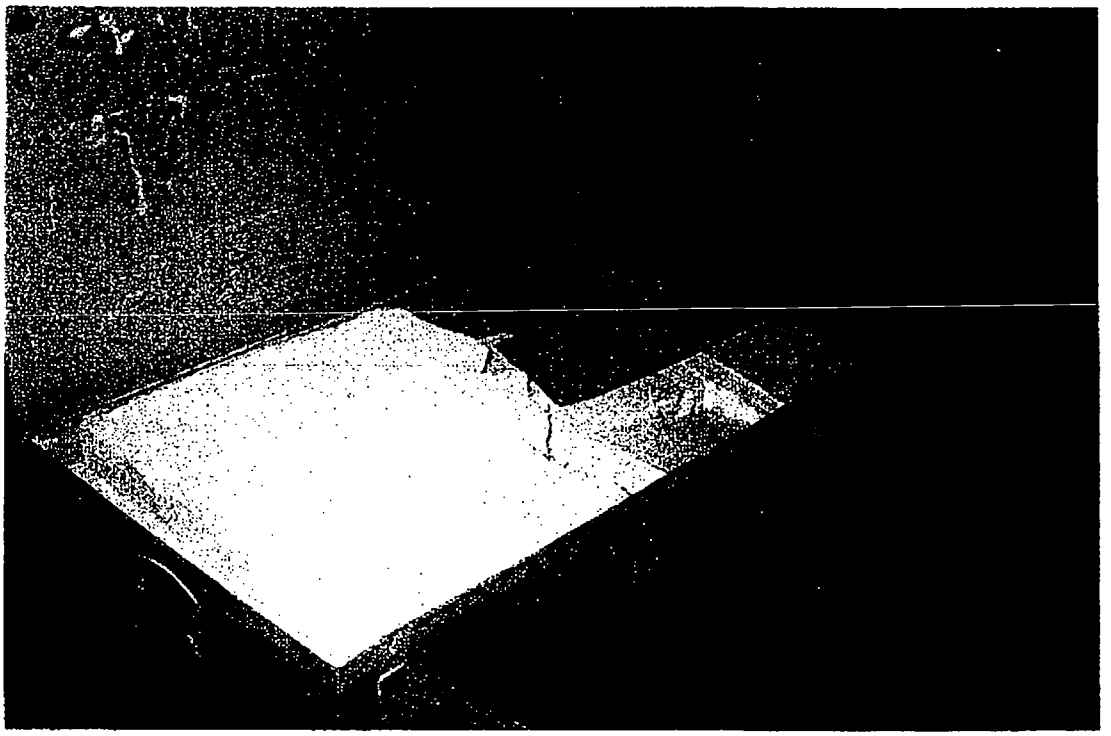
4. In general, control and minimize access to the interior portions of these vessels. In the future, perform an exhaustive hazmat investigation prior to sale, scrap or salvage of these vessels.



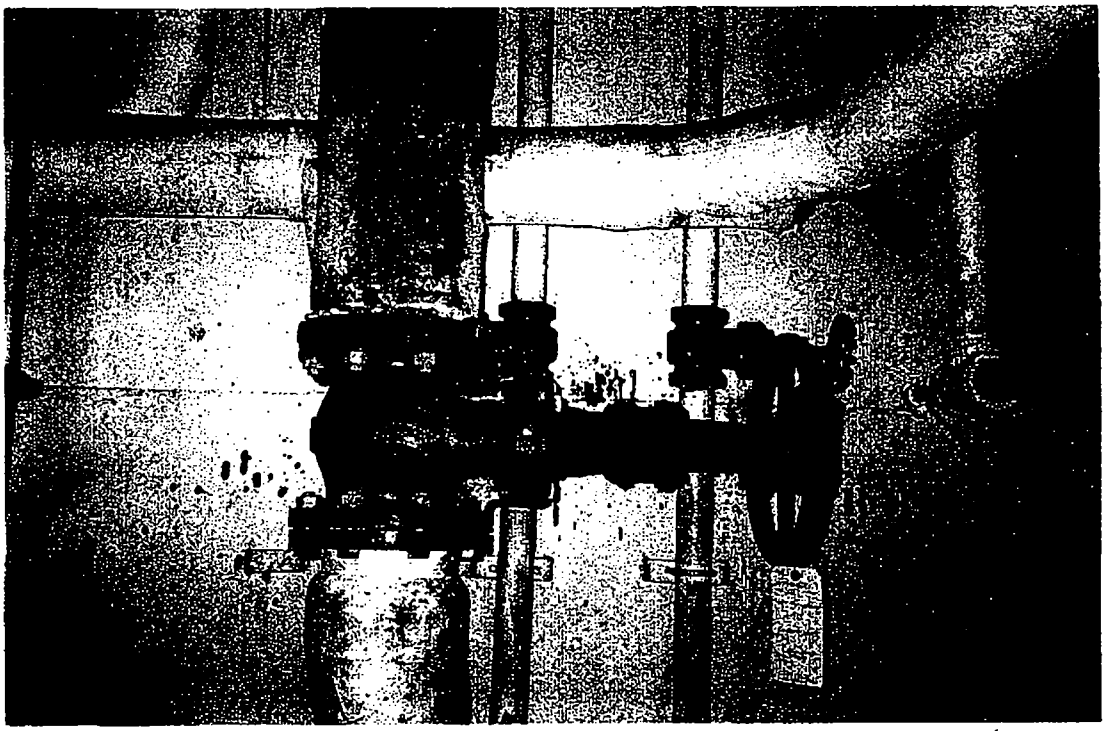
DRY DOCK #1; TERMINAL NO. 1 FACING WEST; 5/11/95

MAG PIPE INSULATION AND DEBRIS; SEVERE DAMAGE AND DEBRIS ARE LIMITED TO A FEW AREAS.

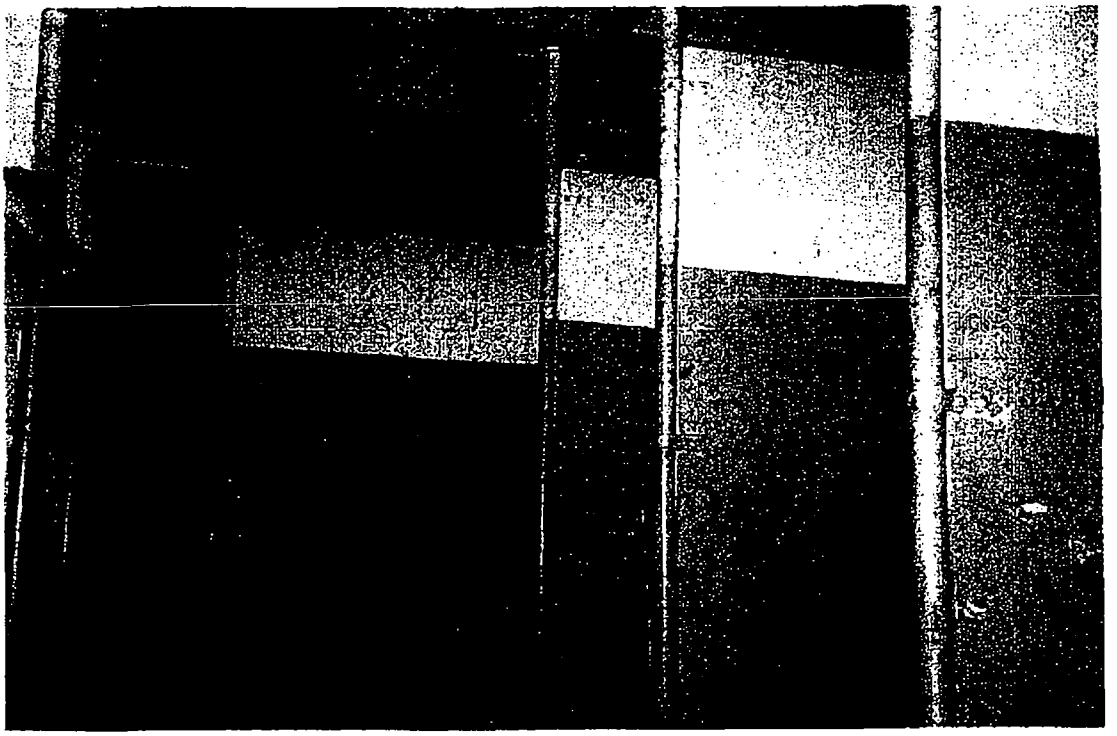
STORAGE LOCKER FULL OF FRIABLE MAG INSULATING CEMENT; APPEARS TO CONTAIN AMOSITE ASBESTOS.



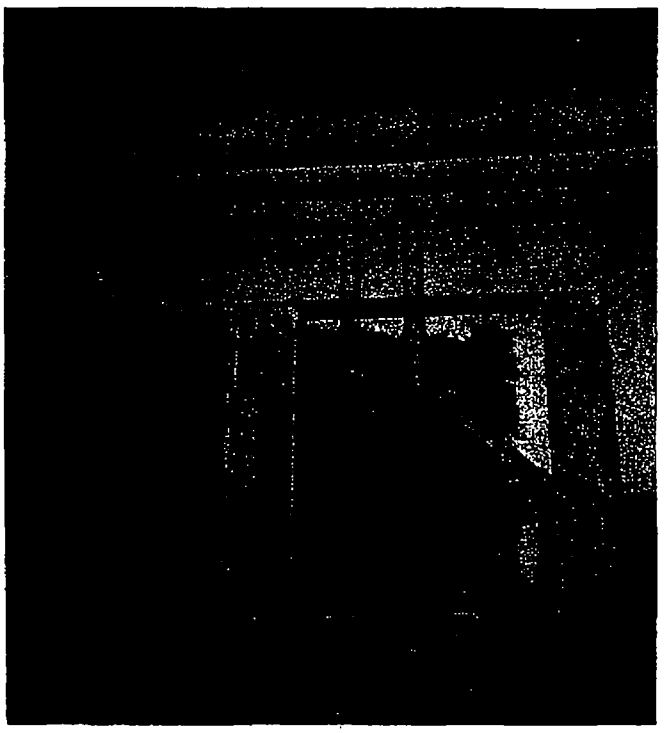
STORAGE LOCKER FULL OF FRIABLE MAG BLOCK INSULATION;
APPEARS TO CONTAIN AMOSITE ASBESTOS.



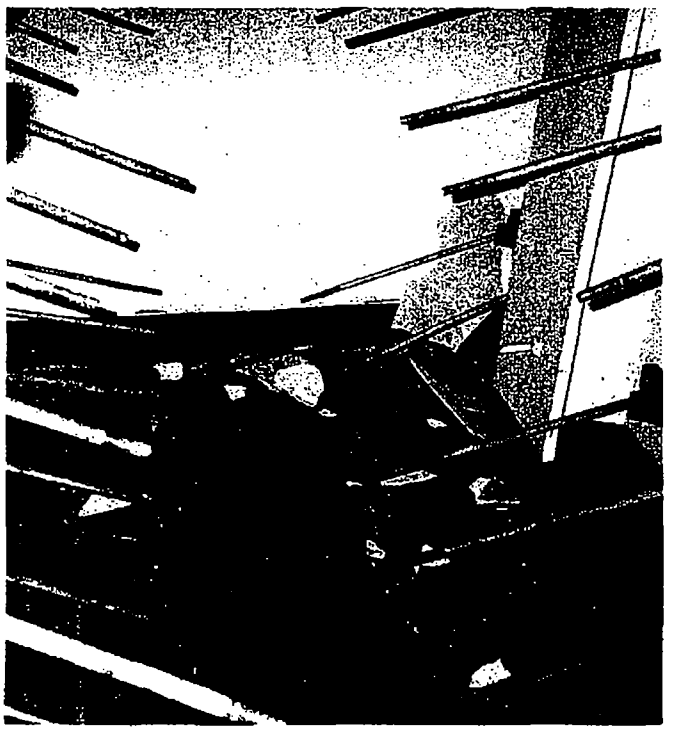
MAG PIPE INSULATION NOT LABELED. MOST PIPE INSULATION IS IN GOOD CONDITION, EXCEPT ENDS WHERE EXPANSION/CONTRACTION HAS EXPOSED FRIABLE INSULATION.



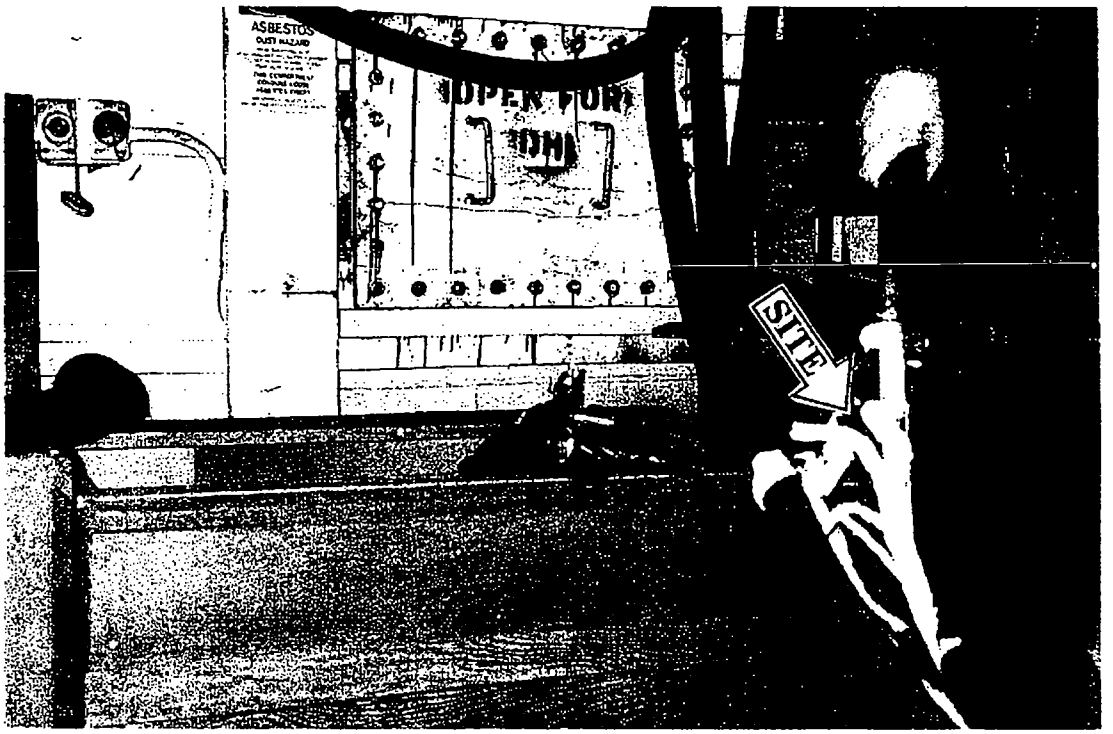
ONE INCH THICK CEMENT ASBESTOS BOARD SEPARATING TOILET STALLS; NOT LABELED, TYPICAL.



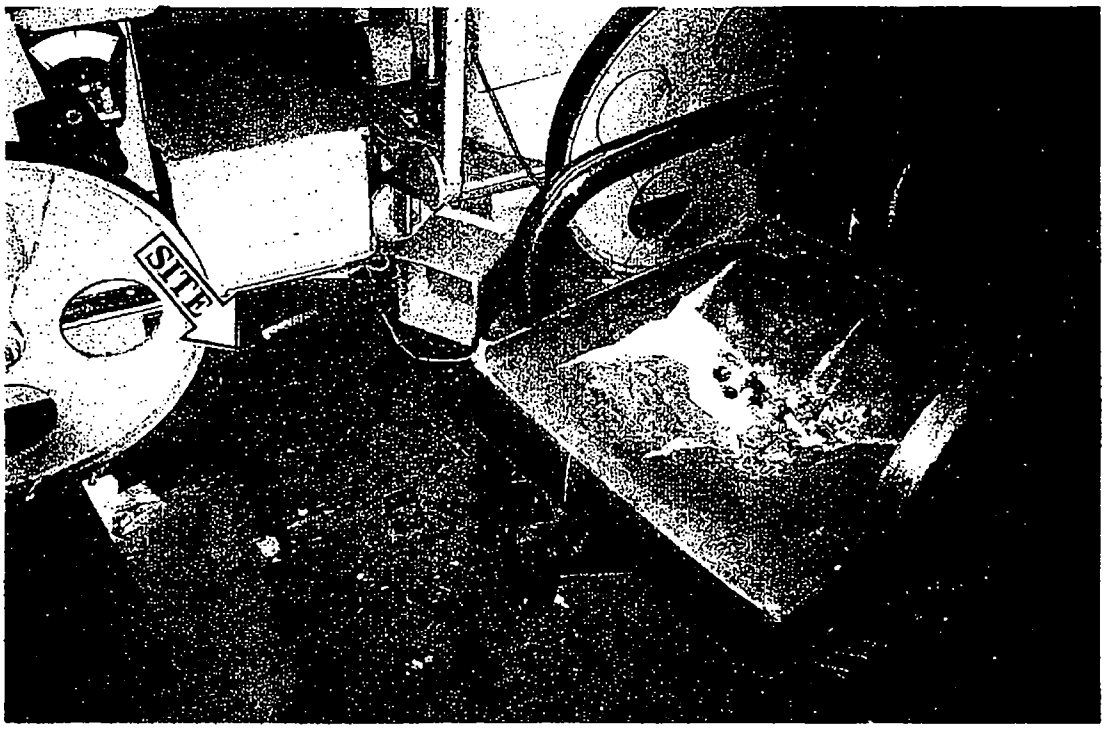
CEMENT ASBESTOS BOARD WALLS PAINTED AND UNPAINTED; PIPE INSULATION IN GOOD CONDITION.



DAMAGED 1/4" CEMENT ASBESTOS BOARD CEILINGS AND DEBRIS ON FLOORS.

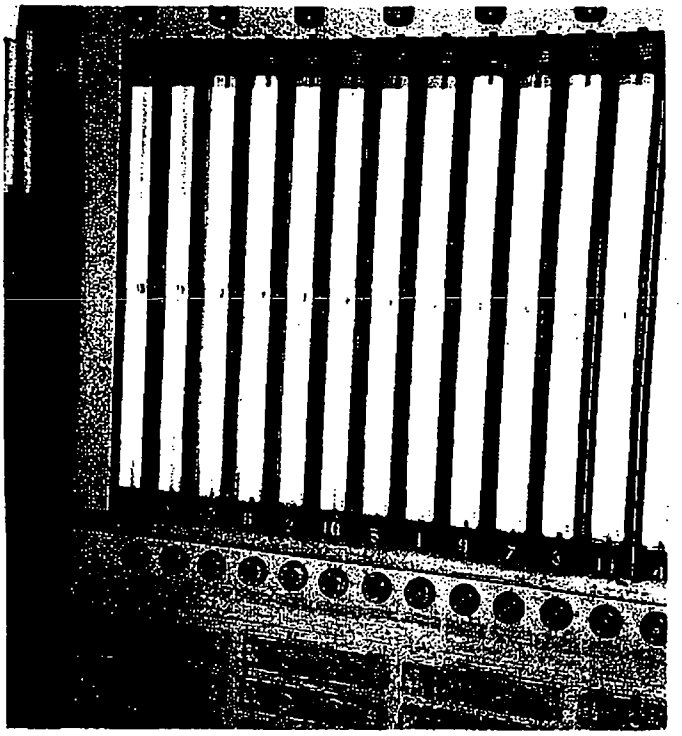


ASBESTOS ROPE INSIDE 3" RUBBER COATED ELECTRICAL "BALONEY" CORD; ROPE EXPOSED AT ARROW; NOTE "DANGER ASBESTOS" SIGN IN BACKGROUND.

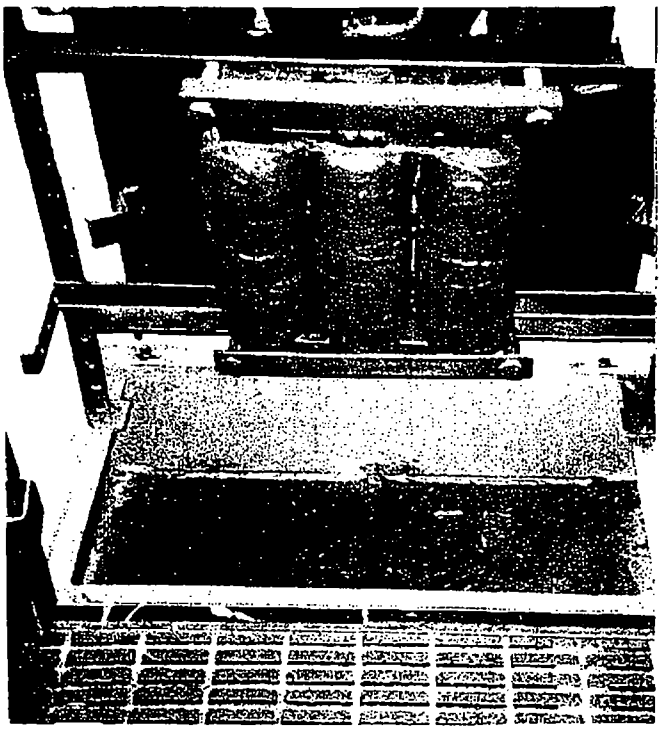


SUSPECT GARLOCK GASKETS AT ARROW, TYPICAL; WELDING SLAG IN CHAIR MAY CONTAIN LEAD, CADMIUM OR SILVER (NOT TESTED).

PEELING PAINT AT ARROW; DEBRIS THROUGHOUT FLOORS POSES TRIP HAZARDS.



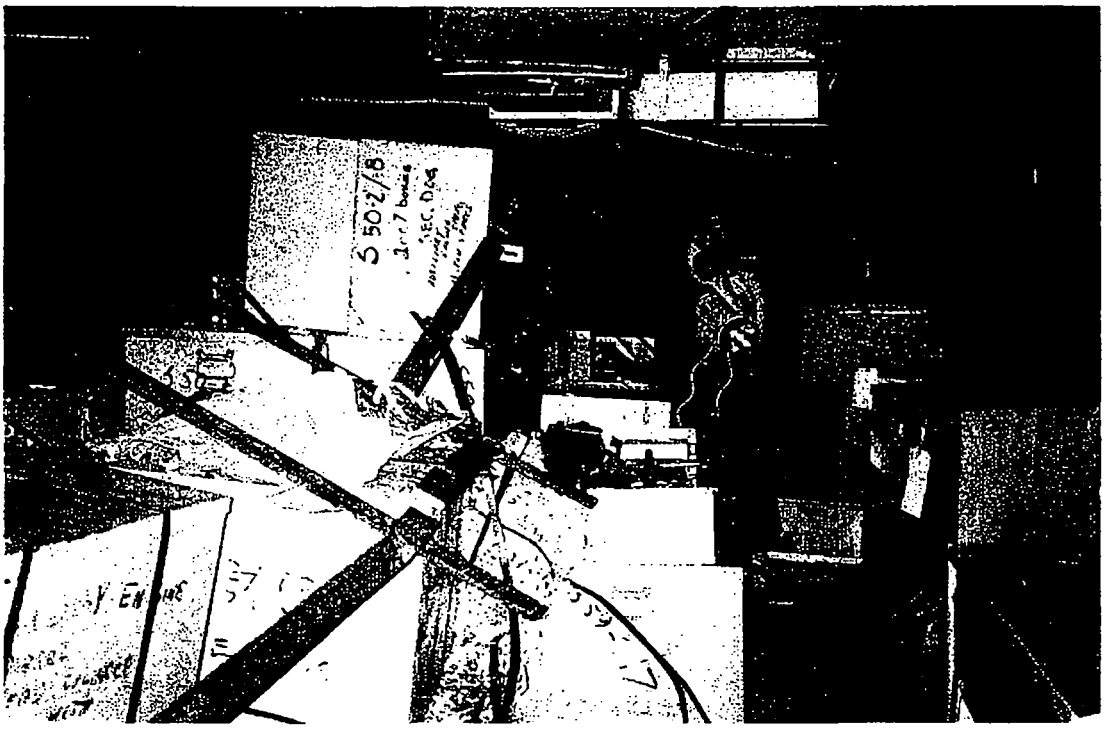
MERCURY CONTAINING MANOMETERS IN GOOD CONDITION.



LEAKING OIL/SLUDGE AT BASE OF TRANSFORMER; TESTED NEGATIVE FOR PCB'S.

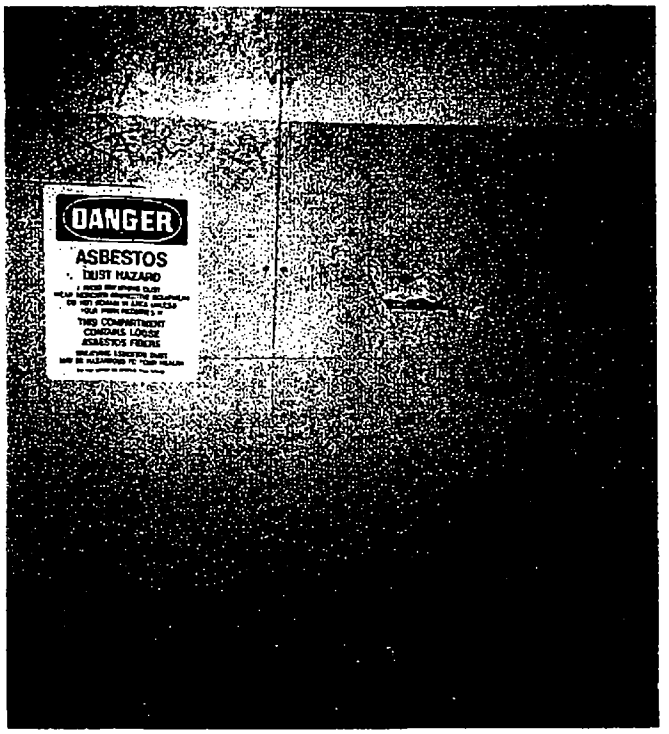
VALVE OIL ON EQUIPMENT AND WALLS/FLOORS, TYPICAL (NOT TESTED).

DRY DOCK #2; TERMINAL NO. 1 FACING WEST; 5/11/95



STORED ITEMS POSE TRIP HAZARDS THROUGHOUT, TYPICAL.

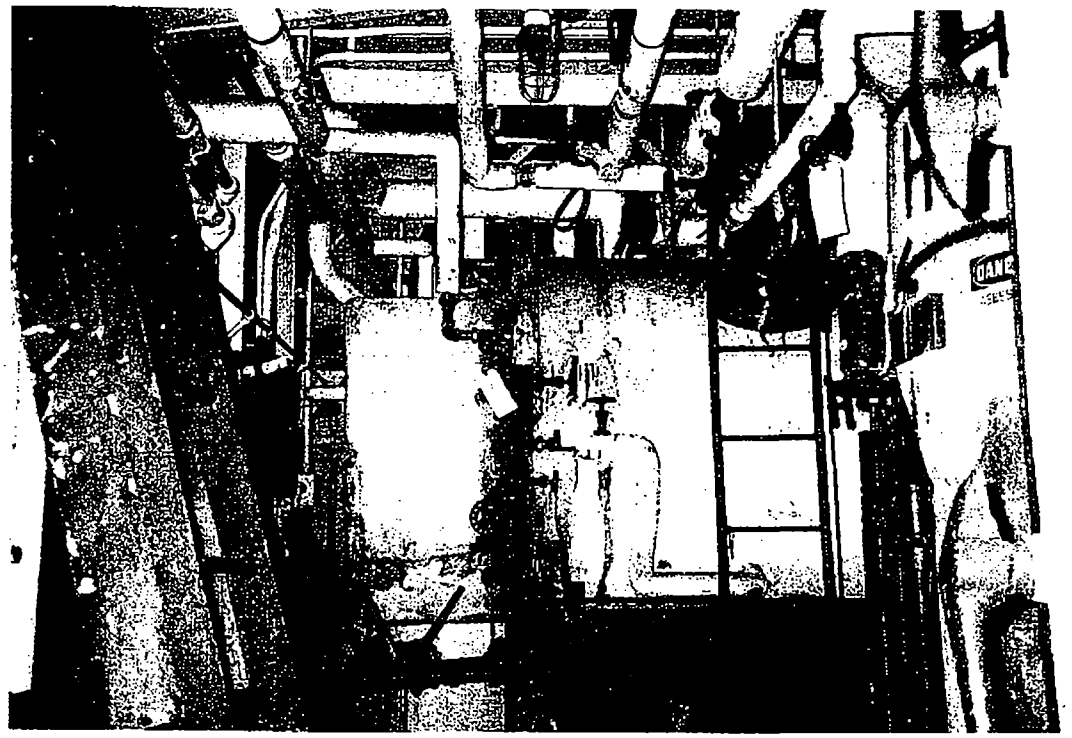
DAMAGED 1/4" CEMENT ASBESTOS CEILINGS.



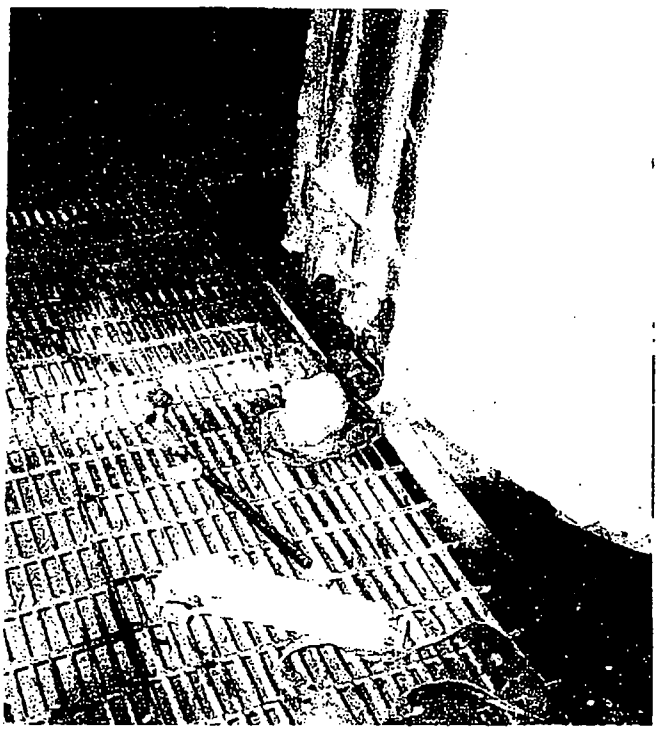
DAMAGED 1/4" CEMENT ASBESTOS WALLS.

DAMAGED ONE INCH THICK CEMENT ASBESTOS BOARD; FRIABLE SUSPECT CHRYSOTILE TEXTILES AND DEBRIS ON FLOOR.

CEMENT ASBESTOS INSULATING BLOCKS ASSOCIATED WITH ELECTRICAL EQUIPMENT.



MAG BOILER, TANK AND PIPE INSULATION IN FAIR CONDITION, TYPICAL.



LIMITED AREA OF SEVERE PIPE INSULATION DEBRIS/POWDER.

SUSPECT ROLLED SHEET GASKET MATERIAL; MODERATELY FRIABLE.

NAVIGATION DIVISION
CONFINED AREA ENTRY PERMIT

DATE 5/11/95 TIME ISSUED 09:30 TIME EXPIRED 15:30

JOB DISCRIPTION check out barge for asbestos

LOCATION Terminal one – berth 106 – willamette river

EMPLOYEES ASSIGNED [redacted] Gregory N. Baker, CIH PBS ENVIRONMENTAL Ken Underhill SUPERVISOR

	INITIAL YES	INITIAL DOES NOT APPLY
PRECAUTIONS TAKEN AGAINST RELEASE OF GAS OR OIL IN AREA		X
OIL SPILLS OR OTHER COMBUSTIBLES HAVE BEEN REMOVED OR PROTECTED	X	
SPECIAL WARNING/CAUTIONS SIGNS POSTED	X	
WELDING MACHINE IS SAFELY LOCATED SAFELY GROUNDED & SPARKS CONTROLLED	NA	
STAND BY FIRE EQUIPMENT NEEDED (LIST):		X
RESCUE MEN DISIGNATED	X	
CRAFTSMEN ARE TRAINED FOR HAZARDS THEY MAY ENCOUNTER	X	
VENTILATION EQUIPMENT HAS BEEN INSTALLED	X	
PROPER MAENS OF ACCESS OR EGRESS IS AVAILABLE	X	

	INITIAL YES	INITIAL DOES NOT APPLY
ATMOSPHERIC TESTING	X	
TRAINING OF PERSONNEL	X	
HEAD PROTECTION	X	
HEARING PROTECTION	X	
HAND PROTECTION	X	
RESPIRATORY PROTECTION	X	
SAFETY BELTS	NO	
LIFE LINES; HARNESS	NO	
SAFETY GLASSES/GOGGLES	NO	
FACE SHIELD	NO	
DUST RESPIRATOR	X	
RESCUE EQUIPMENT	X	

COMMENTS: There are posted asbesto signs in every room "Hazards"

SAMPLING EQUIPMENT USED AND TEST CONDUCTED

TYPE: Exotox 50 monitor TIME 10:10 To 11:25 RESULTS ok

TYPE: " 50 " TIME 11:30 to 12:00 RESULTS ok

TYPE: _____ TIME _____ RESULTS _____

WAS PURGING OR VENTILATION REQUIRED? YES ___ NO ✓ HOW? Not required purging was done with fans

LIST SAFETY EQUIPMENT USED Respirators, communication system, Lighting and radeas, Phone

SAFETY CHECKED BY: Ken Underhill SUPERVISOR: SG K.U. MANAGER: _____

Phone 781 3415

P B S
ENVIRONMENTAL

TRANSMITTAL AND CHAIN OF CUSTODY
FOR
LEAD SAMPLES

Project No. 4810.83

Individuals signing this form warrant that the information that is applicable to their title is correct and complete. The Sender should keep a copy and send the original. The Receiver should complete the form, keep a copy and return the original to the Sender. Receiver shall report damage of package immediately to Sender.

SENDER

Date Sent: May 12, 1995
PBS Environmental
ATTN:
1220 S.W. Morrison, Suite 600
Portland, Oregon 97205
(503) 248-1939
Cheryl Brock
Name
Cheryl Brock 5/12/95
Authorized Signature Date

RECEIVER

DATE RECEIVED: 12 MAY 1995
COMPANY PBS Laboratory
ADDRESS 1220 S.W. Morrison #600
Portland, OR 97205
Condition of Package: OK
Rollie Champe
Name
Rollie A. Champe 12 MAY 1995
Authorized Signature Date

Sender's ID No.	Brief Description (May be left blank when sending bulk samples)	Receiver's ID No.
L4810.83-0001		950512-0608
L4810.83-0002		950512-0609
4810.83-0003		950512-0610

Please analyze the enclosed 3 sample(s) for LEAD content using Atomic Absorption Method. PBS requests prior notification of samples will be disposed.

PBS ENVIRONMENTAL
1220 S.W. MORRISON STREET, SUITE 600
PORTLAND, OREGON 97205
(503) 248-1939

Client: Port of Portland
PO Box 12605
Portland, OR 97212

Project: Dry Lock Dredge Barges

Report Date: 5/16/95
Date Received: 5/12/95
Client Project ID:
PBS Project No.: 4810.83
Page No.: 1 of 1

SAMPLE TYPE: PAINT
ANALYSIS: EPA SW846 Method 3050/7420 Flame Atomic Absorption - LEAD

SAMPLE ID	LOCATION	TOTAL LEAD mg/kg (ppm)	TOTAL LEAD percent (%)	LOD mg/kg
LB4810.83-0001	Dock #1; deck paint	3,363.6	.336	64.9
LB4810.83-0002	Dock #1; urinal paint	2,032.9	.203	43.5
LB4810.83-0003	Dock #1; shower paint	2,139.5	.214	34.1

Analyst(s): LJ

Reviewed by: Rollie A. Champe

Date: 16 MAY 1995

mg/kg - Milligrams per kilogram
ppm - Parts per million
LOD - Limit of detection

Report Number: 1719

Wy'East
Environmental Sciences, Inc.

Research, Laboratory, and Consulting Services

CHAIN OF CUSTODY

2415 SE 11th Ave. • Portland, Oregon 97214 • (503) 231-9320 • FAX (503) 231-9344

PROJECT # 4810,83	PROJECT NAME / SITE DOCK #1	STATE OR	PURCHASE ORDER #
COMPANY PBS	REPORT ATTENTION G. BAKER	PHONE NUMBER 248-1939	FAX NUMBER
SAMPLES COLLECTED BY G. BAKER	DATE COLLECTED 5/11/95	TIME COLLECTED 11:00 AM 5/11/95	SAMPLES CHILLED TO 4° C?
PRESERVATIVE USED? (HCl, etc.) NONE			

FIELD ID	MEDIA	CONTAINER	VOLUME ETC.	ANALYSIS REQUIRED	LAB ID
4910,83-901				FOR PCB'S	19905

RELINQUISHED BY Gregory N. Baker	DATE / TIME 5/12/95	RECEIVED BY	DATE / TIME
RELINQUISHED BY	DATE / TIME	RECEIVED BY LAB	DATE / TIME 5-12-95 11:55
REMARKS		SHIPPED BY	

Wy'East will return white copy to client with laboratory report and keep yellow copy for files. Client keeps pink copy.

POPT1S800037

Wy'East Environmental Sciences, Inc.

LABORATORY REPORT

PBS Environmental
1220 SW Morrison #600
Portland, OR 97205

PROJECT NAME/SITE:	Dock #1	**REPORT NUMBER:**	14528
PROJECT NUMBER:	4810.83	**REPORT DATE:**	5/18/95
EXTRACTION DATE:	5/12/95	**PAGES:**	1

EPA 8080 MODIFIED

Analyte: Polychlorinated biphenyls (PCBs) identification and quantification

Field I.D.	Lab. I.D.	Sample mg/Kg (ppm)	Surrogate Recovery %	Detection Limit mg/Kg (ppm)
4810.83-901	19905	ND*	75	1
--	Blank	ND	--	1

* Possible Halowax 1014
Surrogate is 2,2' 3,3' 4,4' 5' 6 Octachlorobiphenyl
ND = Not Detected (below reporting limit or detection limit)

2415 SE 11th Ave., Portland, Oregon 97214 *Phone (503) 231-9320 FAX (503) 231-9344*